Seismic Operations

Learning the Industry

Alberta

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Seismic Opeations and Farmer's Rights

Preface

This publication is intended to provide the surface owner or occupant with a brief synopsis of their rights regarding seismic operators wishing to conduct seismic operations on private and leased land.

The information is a general guide and may not cover every situation that may be encountered. For specific clarification, the reader should refer or consult the appropriate agency listed on the last page.

Copies of this publication may be obtained from:

Information Packaging Centre
Alberta Agriculture and Food
7000 - 113 Street
Edmonton, Alberta

Revised 2007 05

Seismic Operations and Landowners' Rights

Farmers have specific rights with regard to seismic operations. The Farmers' Advocate has prepared this publication to provide information in response to questions about seismic activity.

It is important to note that a seismic operator may enter onto deeded property only after obtaining consent of the owner of the land or a person authorized by the owner to give that consent. No other agency (government or legal) has the authority to grant access for seismic operations. Therefore, it is entirely up to the farmer to negotiate the specific terms of the contract to ensure that his/her interests are protected.

Chronology of a Seismic Survey

- The owner of the land is approached by a seismic company or its agent with the intention of negotiating a permit.
- Access routes are established. Gates are designated for use and/or fences are cut. The seismic company is responsible for the repair of the fences, but may contract with the occupant for their repair.
- The proposed seismic lines are positioned across the properties using laths or other approved material as markers. Note: The use of wire pin flags is no longer permitted, unless written consent is provided by the owner of the land.
- Seismic lines are cleared of brush or snow using a method authorized by the landowner.
- Markers (e.g., flags) are measured out and placed along the length of each seismic line. Each marker is surveyed to determine its horizontal and vertical position. This surveying procedure is referred to as chaining. Most companies now use Global Positioning Systems (GPS) for surveying.
- There are two types of energy sources used through the geophysical industry, surface and subsurface energy. These are also referred to as non-explosive and explosive energy sources.
- If the project uses an explosive energy source, drilling is conducted at each designated source marker. A dynamite charge, with a length of cap wire attached, is loaded down each hole. An approved hole plug is inserted approximately one metre below the ground surface, 40 centimetres of an approved sealing product is placed on top of the plug (usually bentonite) and 60 centimetres of drill cuttings are place on top of the sealing product to ground surface. The rest of the drill cuttings are spread on the ground surface.
- If the project uses non-explosive energy source (surface energy) this is a mechanically generated energy source at the ground surface that produces a signal for acquiring exploration data. A non-explosive energy source includes, but is not limited to, vibroseis or air gun.
- The seismic crew then lays out cable and places recording devices called geophones on the ground surface according to the markers placed by the survey crew.
- The recording of the seismic line is conducted by detonating each shot hole in sequence (dynamite survey) or by positioning surface energy equipment (vibrators) on the seismic line and applying that type of surface energy in sequence. The energy waves, reflected back by the subsurface formations, are picked up by the geophones and relayed to the recording truck.

- After recording, the seismic line crew picks up the cables, geophones, markers, laths and refuse left by their operations. The cap wire is cut at ground level.
- Any shot holes that blow out must be re-plugged using an approved plug, approved sealing product and drill cutting.
- A permit agent returns to pay negotiated compensation, any outstanding fees and compensation for damages, according to the terms of the permit(s). The permit agent also acquires a release from the landowner. Damage can include crop loss, hay damage, rutting and fence repairs. Damage that becomes evident after the signing of a release (e.g., after winter operations) remains the responsibility of the company.

Seismic Tests on Deeded Land

Seismic activity isn't governed under the *Surface Rights Act*. A seismic operator can't gain access unless the landowner voluntarily gives consent. The specific rights of the landowner are protected under the Exploration Regulation. It states no person shall conduct exploration on private land, except with the consent of the owner of the land or a person authorized by the owner to give that consent.

It is important to note that unless the occupant or lessee of private land has an agreement with the owner of the land within the lease agreement, the lessee may not give permission to the seismic company to enter upon the land, cut trees or commit waste (waste is the abuse or destructive use of property).[1] The renter's agreement is to farm the land only, not remove trees or allow their removal. In addition, the potential for drill holes to create a problem that lasts beyond the term of the tenancy creates a need for the landlord to consent to seismic activity.

It is recommended that the owner of land and the lessee discuss this issue and work out the details within the lease agreement. For example, the details might include:

- the owner of the land has exclusive right to say yes or no to entry upon the land
- the owner of the land receives payment for entry, access and recording
- the owner of the land ensures that the lessee has input as to access, timing, etc.
- the lessee is contacted by the company (permit agent) during the negotiations
- the lessee maintains the option of open discussions with the owner of the land in the negotiations with the permit agent
- the lessee receives payment for crop damage, inconvenience, etc.

Therefore, both the owner of the land and the renter have input into to seismic testing on the land as the activity affects both parties.

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1 Alberta Regulation 284/2006, s. 8

If entry is refused by the owner of the land, the operator has no appeal and geophysical activity cannot occur.

Note: If a landowner refuses access to private lands, the program may continue around those lands by using road allowances. The maximum allowable fine for conducting exploration on private land without the consent of owner of the land is $25,000.

Seismic Tests on Leased Public Land

Effective July 10, 2003, in cases of access to public agricultural land by exploration interests, applicants must first obtain from the Minister an approval to explore.[2] Once the exploration approval is granted in respect of the land that is the subject of an agricultural lease, the exploration approval holder informs the leaseholder of the exploration approval by sending a copy of it to the leaseholder. The agricultural leaseholder's written consent has to be obtained or, if it is not, local public lands staff will provide facilitation. If parties can't reach agreement at this level, the exploration approval holder can apply to the Surface Rights Board if the concern is access or compensation related. If it is an operational or land use concern they can request a review through the Exploration Dispute Resolution process.[3] Under the Exploration Dispute Resolution Regulation any disputes that arise related to operational or land use concerns can be reviewed. Either party can request a review by a Local Settlement Officer (LSO). The LSO will arrange a meeting between the two parties at the earliest date after the notice of the dispute. A facilitated negotiation is encouraged, as opposed to having the LSO impose an outcome by adjudicating on the merits.

If such an outcome is not possible, the LSO reviews the matter and makes a determination about the operational and/or land use concerns. This is communicated to the parties in writing. Policy dictates that the timeline for reaching a facilitated agreement, or the LSO making an adjudicated determination, is 10 working days. The outcome is considered an "LSO Decision," regardless of the manner in which it is arrived.

There is still the opportunity for either party to seek a review of the LSO's decision by making a request to the Review Committee. A number of formal requirements must be met by the applicant and due process must be followed. In response, the Review Committee may make a number of decisions. The Review Committee may also seek to facilitate an agreement between the two parties. It should be noted that the decision of the LSO is in effect until such time as the Review Committee reaches a decision. The Review Committee should render a decision within 10 working days and notify the parties in writing. This decision is binding.

Seismic Tests on Leased Road Allowance

If the lessee of a road allowance and the seismic operator are unable to reach a negotiated agreement, a seismic operator can conduct seismic operation on a leased road allowance 48 hours after giving written notice to the lessee.[4]

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2 Alberta Regulation 284/2006, s. 23

3 Alberta Regulation 227/2003

4 Alberta Regulation 284/2006, s. 10(2)

Once the seismic operator has entered the leased road allowance, repairs must be made to any fence broken or altered as a result of the seismic activity. The operator must also take all necessary measures to prevent the straying of and injury to livestock. The seismic operator must pay for any damages arising from the exploration operations.

On a developed road allowance, permission for seismic exploration is granted through Alberta Sustainable Resource Development (SRD). This is done in accordance with the Exploration Regulation which includes notice to the municipality.

Who is Testing?

Should landowners wish to find out who is conducting seismic operations on their deeded land, SRD's Land Management Branch keeps an up-to-date record of crew start-ups and completion notices. They are located in Edmonton and can be reached by calling (780) 427-3932.

When requesting approval for a preliminary program application and seismic plan, the licensee is required to submit a preliminary seismic plan to SRD's Disposition and Technical Services Branch in the Lands Division.[5]

Notification Condition

Conditions of all seismic approvals being carried out in the White (settled) Area of the province include notification to all residents within 400 metres of any seismic line(s) planned in the area. This notification must be made a minimum of 48 hours prior to the commencement of seismic operations and is required regardless of the energy source being used. As a minimum. The notification must contain the following information: the name of the licensee and/or permittee; a contact name complete with phone number; and, a description of the energy source. Notification can be to each individual residence, or by public announcement, signage, etc.

Seismic Operations and Water Wells

A number of enquiries are made to the Farmers' Advocate Office about the effect of seismic operations on water wells. If water well damage is a prime concern, the owner of the land can exercise their right to refuse entry until adequate guarantees are given. As well, minimum setback distances are established by the Exploration Regulation (See the Table of Required Setback Distances to Specified Structures on page 9).

5 The licensee is a company with a valid license by whom or on whose behalf the application for the exploration approval is made, with respect to a particular program of exploration and under whom the approved exploration program is conducted.

If there are concerns about the possibility of well failure or water quality deterioration when seismic activity is proposed over your land, the landowner and permit person can:

- document information about the well (age, depth, completion, driller, yield, etc.)
- perform a static level test (measure from top of casing at ground level down to the height of the water)
- negotiate a more in-depth well study (e.g., pump tests) at the operator's expense, prior to the signing of any permit forms
- use the attached is a guideline for testing of waters wells for geophysical operations

When a landowner believes that seismic activity has disrupted his well, the following course of action is recommended.

1. *Contact the seismic company doing the work using the contact information on the permit form or the 400 metre notification information.*
2. *Contact SRD's Land Managment Branch at (780) 427-3932. Upon receipt of the inquiry the department will conduct a thorough and impartial investigation and attempt to determine the cause of the existing water well problem.*
3. *Should these avenues not resolve the matter to your satisfaction, you may contact the Farmers' Advocate Office regarding the Water Well Restoration or Replacement Program. The program may provide compensation to an applicant whose well may have been affected by either seismic activity or the drilling of oil and gas wells. To be eligible for the program, the well must be completely repaired or replaced, and all receipts must be attached to the application form. Once that application has been decided upon, no additional costs incurred can be submitted.*

For more information about this program or to obtain application forms, contact the Farmers' Advocate Office at (780) 427-2433.

Guidelines for Water Well Test/Evaluations for Seismic Programs

Licensee: _____ License no.: _____

Program/prospect name: _____ Date: _____

Landowner name: _____ Phone: _____

Address: _____

Legal description: Sec. _____ Twp. _____ Rge. _____ W ___ M – GPS coordinates/elev. (NAD83) _____

Description of well location on property: _____

Water well driller: _____ Journeyman cert. no.: _____

Reference point for measurements taken from: E.G. top of casing: _____

Well depth: _____ *(metric)* _____ *(imperial)* Pump depth: _____ *(metric)* _____ *(imperial)*

Non-pumping static: _____ *(metric)* _____ *(imperial)* Pumping rate: _____ *(metric)* _____ *(imperial)*

Depth water sample taken: _____ *(metric)* _____ *(imperial)* Lab sent to: _____

Age of well: _____ Casing size: _____ Condition: _____

Has water well drill report been obtained from Gov.: Yes ☐ No ☐ Well I.D. no.: _____

Confined space: Yes ☐ No ☐

Guidelines for Water Well Test/Evaluations for Seismic Programs *(continued)*

Depth to Water Level Elapsed Time		
Pumping	**Min.**	**Recovery**
	0	
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	12	
	15	
	20	
	25	
	30	
	35	
	40	
	50	
	60	
	70	
	80	
	90	
	100	
	110	
	120	

Water sample collected: Yes ☐ No ☐

Lab sample analysis required: Yes ☐ No ☐

Pre test: _____ Post test: _____

Time of test: _____ AM _____ PM

Bacteria present ☐ iron ☐ and/or sulfate ☐

Sheen Yes ☐ No ☐

Gases present Yes ☐ No ☐

Tannin water Yes ☐ No ☐

Sediment present Yes ☐ No ☐

Odour noted Yes ☐ No ☐

Well type: domestic ☐ livestock ☐ other _____

Well in use: Yes ☐ No ☐

It is very important to complete this form thoroughly.

Comments:

Water well service history:

If unable to complete test explanin below:

On site observations

Signature of landowner and evaluator **required** for acknowledgement. Pumping rate should not exceed well capacity for production. Use other side for additional comments.

Landowner (signature)

Water Well Evaluator (signature)

As required by legislation, be aware that you, the landowner, are giving consent for the collection of the personal information on this form for the purpose of conducting and completing a water well evaluation.
Pre- and post-water well testing/evaluations pertaining to geophysical programs are NOT a regulatory requirement of the Alberta Government.

Property Damage

It should be noted that there will be some surface disturbance such as vehicle tracks, drill holes and some compaction due to vehicle traffic. If damages occurs that is beyond the normal wear and tear of seismic operations, the seismic operator shall take immediate steps to rectify the problem and prevent additional damage. If a shot hole caves in, creating a cratered hole or releasing water, the licensee is responsible for present and future claims as long as the licensee is still a viable company or has been merged, amalgamated or taken over by another company.

When a flowing hole occurs, it is recommended that that licensee confine the flow to the aquifer of origin as per the Exploration Regulations (AR284/2006). It should be noted that a flowing hole can be converted to a water well. However, with no exceptions, the flowing hole has to be completed in accordance with the Water (Ministerial) Regulation (AR 205/98). Upon the completing of this water well, the licensee is no longer responsible for that hole as it is no longer a shot hole.

If the operations causes damages over and above normal wear and tear to the land or damages to improvements such as fences, culverts, gates, etc., compensation should be negotiated before a release is signed. In the event a settlement can't be reached, SRD's Land Management Branch can be contacted at (780) 427-3932. An investigator will conduct an investigation to determine how the issue can be resolved through facilitation. The department recommendations are not binding on either party.

Should the landowner anticipate problems with settling a damage claim after the geophysical operation has taken place, he has the right to include an arbitration clause in the geophysical permit. This should be added onto the permit form in the section marked "additional remarks." This should be done at the time of signing. Should you have any questions about this procedure, contact the Farmers' Advocate Office.

It is highly recommended that the owner of the land inspect the land surface prior to signing the release, so that any outstanding issues can be identified and addressed. The other option is to inspect that land surface with the agent when release negotiations are occurring.

Table of Required Setback Distance to Specified Structures

Specified Structure	Explosive		Non-explosive/ Other
	Charge Size	Distance	Distance
Residence, barn, or any building(s) with a concrete base, concrete irrigation structures (e.g., drop structures, head works), concrete lined irrigation canals, and concrete water pipelines.	Up to and including 12 kg	180 m	50 m
	>12 kg < = 20	200 m	
Water wells, developed spring,* observation well, or peizometer.	Up to and including 12 kg	180 m	100 m
	>12 kg < = 20	200 m	
High-pressure Pipelines High-pressure pipelines are pipelines that operate at, or are intended to operate at a pressure in excess of 700 kilopascals.	< = 2 kg	32 m	32 m
	>2 & <4 kg	45 m	
	> = 4 & <6 kg	55 m	
	> = 6 & <8 kg	64 m	
	> = 8 & <10 kg	70 m	
	> = 10 & <12 kg	78 m	
	> = 12 kg < = 20	100 m	
Low-pressure Pipelines Low-pressure pipelines are pipelines that operate at, or are intended to operate at a pressure of 700 kilopascals or less.	Up to and including 20 kg	3 m	3 m
Irrigation Canal (other than concrete lined) Irrigation canals that are more then 4 m wide		10 m	10 m
Buried Water Pipelines (other than concrete lined)		3 m	3 m
Dams Dam means a barrier constructed and having a storage reservoir capacity of at least 30,000 m3, and which is at least 2.5 m in height when measured vertically to the top of the barrier.		180 m	50 m
Cemetery Distance to the energy source is measured to the surveyed boundary of the cemetery.		100 m	50 m
Buried Lines and Survey Monuments Telephone lines and telecommunication lines.		2 m	2 m
Domestic Septic Tank or Mound A septic tank is defined as a tank that is used as a septic storage device. A mound is a septic storage device that is located above ground surface.		15 m	15 m

* A developed spring is an area of local groundwater discharge that has had human intervention to make the water usable or attainable for domestic and/or non-domestic purposes, and is intended for long-term use.

Note: All distances are measured from the centre of the pipeline.

Note: If ***written consent of the owner of the specified structure*** is obtained, then reduced setback distances to the specified structures for explosive energy and non-explosive energy sources can be implemented.

Table of Reduced Setback Distance to Specified Structures with Written Consent of the Owner of the Structures

Specified Structure	Explosive		Non-explosive/ Other
	Charge Size	Distance	Distance
Residence, barn, or any building(s) with a concrete base, concrete irrigation structures (e.g., drop structures, head works), concrete-lined irrigation canals, and concrete water pipelines. Water wells, developed spring*, observation well, or peizometer.	<= 2 kg	64 m	50 m
	>2 & <4 kg	90 m	
	>= 4 & <6 kg	110 m	
	>= 6 & <8 kg	128 m	
	>= 8 & <10 kg	142 m	
	>= 10 & <12 kg	156 m	

* A developed spring is an area of local groundwater discharge that has had human intervention to make the water usable or attainable for domestic and/or non-domestic purposes, and is intended for long-term use.

Abandonment of Holes and Cleanup

The Exploration Regulation states that if an explosive energy source is used, the licensee or permitee shall, to the extent possible, ensure that, before the drilling rig is initially removed from the location of the last shot holes drilled, an approved permit tag has to be obtained. The permit tag must contain the number of the exploration approval for the program and the permit number of the program permittee.[6] It must be securely affixed in a location that is readily visible and facing the centre source point. Also, it should be on the same side of the highway or public road as the centre source point, and not more than 10 metres from each centre source point.

If a non-explosive energy source is used to conduct a program of exploration, the program licensee and program permittee shall, to the extent possible, ensure that permit tags are put in place before the equipment used for recording the program is initially removed from the site or location.

For programs the utilize explosive energy sources, each shot hole must be temporarily abandoned immediately after drilling and loading of the shot hole. It must be permanently abandoned after detonation, as per the Exploration Regulation.

6 Alberta Regulation 284/2006, s. 55

Another concern is that the ground surrounding the hole be restored as close as possible to its original condition. Therefore, the seismic operator is responsible for the clean-up of debris and the spreading of drill cuttings not required to fill the hole.[7]

It should be noted that the owner of the land may have the shot holes abandoned in any method he prefers, as long as the abandonment procedure outlined in the Exploration Regulation is meet.

Compensation

The matter of compensation for entry and access is left entirely to the owner of the land and the licensee. There is no legislation governing the amount or method of payment. It's common practice for seismic operators to offer compensation that is equitable to all who are affected by the geophysical program. If a negotiated amount can't be reached, the owner of the land may refuse to allow entry. Generally, most operators agree to pay access fees within 30 to 90 days following completion of the geophysical program. However, payment may be requested prior to or shortly after entry by the licensee.

3-D Seismic Surveys – Special Considerations

Many seismic operators are now utilizing the three-dimensional (3-D) process, resulting in significant oil and gas discoveries. The older, two-dimensional (2-D) process uses only one shot line in conjunction with a geophone line. The 3-D method involves laying out a network of separate source lines and receiver lines, usually at right angles to each other.

Depending on the type of target being explored, the 3-D line grid may have receiver line spacing and source line spacing that vary from 60 metres to a few hundred metres. These intervals may vary depending upon the depth of the target zone. When the operator is recording by this method, numerous geophones are place on the ground surface at one time. Sometimes it appears that the seismic crew isn't in the vicinity and yet there are numerous geophones and cables across the land. They are being used to record seismic energy despite the crew being some miles away.

Three-dimensional seismic acquisition has special considerations for the landowner that aren't observed with 2-D seismic. More men and equipment are used for 3-D acquisition. Even on the Prairies, some crews incorporate the use of a helicopter to move equipment around. Receiver and source lines are usually kept as straight as possible. However, they may wander slightly to avoid buildings, stands of trees, water, etc. When a seismic operator acquires a permit for 3-D acquisition, he will usually want the ability to move or offset source points from the original permitted line. The discussion of offsetting with the permit agent (company's representative) at the time of permitting is important.

7 Alberta Regulation 284/2006
s. 50 - Exploration Directive 2006-19 and
s. 57 – Exploration Direcitive 22

Since larger areas can be recorded with 3-D equipment, it stays on the ground longer than for 2-D acquisition. When discussing the conditions of approval with the seismic operator's representative at the time of permitting, it's important to discuss the timing of the acquisition. This is particularly true if there is farming activity planned in the near future.

Access to various parts of a 3-D survey is often difficult and time consuming. If the owner of the land doesn't allow access off the permitted lines, the operator is obligated to stay on the source and receiver lines. At times this is difficult because of the terrain. Detours are sometimes necessary. It's beneficial to the seismic operator if the owner of the land allows limited access to move from line to line or to cross fence lines and gates. Both parties should discuss conditions of access at the time of signing to ensure that there are no misunderstandings once operations begin.

Permit Form

The Canadian Association of Geophysical Contractors, in conjunction with the Farmers' Advocate Office, the Canadian Association of Petroleum Producers, the Small Explorers and Producers Association of Canada, and Alberta Sustainable Resource Development, has developed a standard permit form entitled, *Permit to Conduct Geophysical Operations (revised in 1998)*.

We strongly recommend that this document be used for all seismic operations. A landowner is under no obligation to use any other form. The landowner has the right to refuse entry over the matter of compensation or dissatisfaction with the company's permit form. The *Permit to Conduct Geophysical Operations* form affords the landowner more protection than any agreement currently in use. It was created to protect the landowner's interest and satisfy the company's needs. However, if changes are required to suit particular agricultural operations, both parties are at liberty to do so. Negotiation is the key word. Whatever is agreed to between the owner of the land and the licensee, it should be communicated to the lessee if the land is leased.

A standard clause on the permit form includes a statement indicating, "Ok to move, shift, offset or delete lines." If this statement provides a concern to the landowner, revisions should be addressed at the time of permitting.

The permitting stage provides the landowner an opportunity to address lessee concerns if the land is rented, and attach any specific condition(s) deemed necessary to protect interests and/or minimize impact associated with geophysical operations being conducted on his/her property. As such, the landowner is advised to get these concerns in writing on the permit.

Damage Release Forms

Release froms aren't required under government regulations or the law. However, as part of their own policy many companies do require a signed release form upon payment of the negotiated fees (access, recording fees, etc.) and damage payments (if damage occurs). There are certain items to pay special attention to. These include:

- payment should be for a specific damage named, even if it may be general in nature like rutting of a field, crop loss, fence damage, etc.
- payment should cover a specific time period – all damages up to and including a certain date

A concern of the geophysical industry is that it does not want to be held responsible for specific losses for an indefinite period of time. Seismic operators want to pay and then be released from that specific damage. On the other hand, landowners want to be able to receive compensation for unforeseen damage, when such damages can be attributed to the seismic operation. Most of the damages associated with seismic operations, as they pertain to land, occur immediately or within a short period of time. If additional damages become evident after the release form has been signed, the farmer may still be able to pursue them with the company. This becomes more difficult as time passes. That is why it is extremely important to inspect your land prior to the permit agent showing up at your door for release of the program.

In order to deal with any subsequent damages it's important that the signed release form covers only those damages that are evident at the date of signing. Read and understand what is presented to you. If you're unsure, seek assistance before signing.

Once a damage release form is signed for a specific loss, there can be no future claim for that item. However, this doesn't cover craters and flowing holes that result from shot holes, years later. By law, the seismic operator is still responsible for damages unforeseen at the time of signing the release. Therefore, keep all your records and these records should be passed to future owners of the property.

As long as the negotiated contract meets the conditions requested, and the remuneration offered is satisfactory, it's in everyone's interest to allow exploration on the property.

Permit Agents

Permit agents are individuals that work for and represent the licensee who wants to conduct exploration on the land. They are the individuals who come to your home to explain the seismic program to you, negotiate entrance to your land and negotiate the final release of the exploration program. ENFORM is an industry training school that has developed, with input of Farmer's Advocate Office and SRD, a four-day course specifically designed for permit agents and geophysical activity. Alberta Sustainable Resource Development, the Farmer's Advocate Office, the Canadian Association of Petroleum Producers, the Canadian Association of Geophysical Contractors and the Small Explorers and Producers of Canada endorse the Geophysical Permit Agent Course that is offered through ENFORM of Calgary. Although this

program is not mandatory, it is highly recommended that all permit agents complete this course. Upon satisfactory completion, ENFORM issues a certificate number to the geophysical permit agent. A landowner should request that the geophysical permit agent's certification number be recorded on the permit form. This confirms that the geophysical permit agent has completed the industry and government recognized program.

Permit agent concerns can be forwarded to the Canadian Association of Geophysical Contractors at (403) 265-0045.

Additional Points of Interest

The following are specific problems that have arisen in the past. By making you aware, you may avoid them.

- Be sure that the width of seismic line is indicated on the contract. Depending on the type of equipment used and the terrain, lines may vary from 1.5 to 8 metres.
- Make sure that the contract states that admittance to the line is through a designated point. Otherwise, the seismic operator may enter from any point, which could result in damage to crops, etc.
- Be sure that the line is on a specific area. Otherwise, the right is given to test on the whole quarter section, depending on the agreement.
- Draw a diagram on the permit form that clearly indicates the route to be taken. Be specific if a diagonal route across the section is not desired. Indicate that it's to follow fence lines, to avoid shelterbelts, etc. If line cutting through trees or brush occurs, determine and stipulate the methods of disposal and clean-up to be employed by the operator.
- Stipulate on the contract the date the operator plans to be on the property and the date by which he must be off. Otherwise, the seismic operator may still be on the property when it comes time to seed or harvest.
- Should the company decide to "set up camp" on the property, have it written into the contract that the licensee is responsible for all additional damages, such as diesel spills. Note that all garbage and toilet facilities are to be cleaned up to your satisfaction.
- If water wells are a concern, see that they are properly covered within the terms of the contract.
- If you do not understand the process, description, etc., do not hesitate to ask questions of the permit agent, Sustainable Resource Development's Land Management Branch or the Farmer's Advocate Office.

The references to provincial regulations contained in this publication are often excerpts. In some cases the regulations have been condensed. They should be treated as such. If the specific wording of the regulation is desired, copies are available through the Queen's Printer, 11510 Kingsway Avenue, Edmonton, Alberta, T5G 2Y5 (780) 427-4952 or through the Office of the Farmers' Advocate.

Geophysical Inspector Program

Alberta Sustainable Resource Development (SRD) administers the geophysical regulatory enforcement program, which involves the enforcement of the Mines and Minerals Act (Part 8) and the Alberta Exploration Regulation 214/98. The program also assists in resolving issues and concerns between the geophysical industry and municipal districts, counties, special areas and landowners, through facilitation. Geophysical crew inspections are conducted on an ongoing basis as part of the regulatory enforcement program to ensure compliance with act and regulation. If an infraction is identified through a crew inspection or a complaint, various levels of enforcement action may be imposed including a monetary penalty.

This program also assists landowners, counties, municipal districts (including special areas and irrigation districts) with geophysical-related inquiries and concerns associated with exploration activity. The investigation of landowner concerns includes such items as: water wells, structural damage, permit disputes, surface damages, trespass (and related damage), flowing or cratered shot holes, livestock damages and miscellaneous inquiries.

Geophysical inspectors are presently located in Edmonton and Red Deer. This service can be accessed by contacting Alberta Sustainable Resource Development at (780) 427-3932 (toll free by dialing 310-0000) or e-mail: LFS.Seismic@gov.ab.ca. The information received will be forwarded to an inspector who will respond to the inquiry. An unbiased field investigation may be initiated in an effort to work with both the complainant and the oil company to resolve the conflict.

Additional information on geophysical operations and landowners can be obtained through a document titled *Seismic Operations and Farmers Rights* that was created by the Farmers' Advocate. The Farmers' Advocate can be reached at (780) 427-2433.

For further information or clarification, you may contact the following:

Farmers' Advocate Office
www.farmersadvocate.gov.ab.ca
Alberta Agriculture and Food
305, 7000 - 113 St.
Edmonton, AB T6H 5T6
Phone: (780) 427-2433 Fax: (780) 427-3913

Petroleum Land Use Operations Branch, Land Use and Reclamation Section
www.srd.gov.ab.ca
Alberta Sustainable Resource Development,
Public Lands and Forests Division
3th Floor, 9915 - 108 Street
Edmonton, AB T5K 2M4
Phone: (780) 427-3932

Canadian Association of Geophysical Contractors
www.cagc.ca
#1045 - 1015 Fourth St. SW
Calgary, AB T2R 1J4
Phone: (403) 265-0045 Fax: (403) 265-0025